



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/602,468

06/23/2003

Venkat Selvamanickam

SPP 20.070

2661

34456

7590

10/02/2007

LARSON NEWMAN ABEL POLANSKY & WHITE, LLP  
5914 WEST COURTYARD DRIVE  
SUITE 200  
AUSTIN, TX 78730

EXAMINER

AUSTIN, AARON

ART UNIT

PAPER NUMBER

1775

MAIL DATE

DELIVERY MODE

10/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/602,468	<b>Applicant(s)</b> SELVAMANICKAM ET AL.	
	<b>Examiner</b> Aaron S. Austin	<b>Art Unit</b> 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 23-34 and 36-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-34 and 36-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20070711</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/12/07 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-34 and 36-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mannhart et al. (US Patent Application Publication No. 2005/0173679).

Mannhart et al. teach a superconductive article comprising a Ni-alloy substrate tape overlayed with a plurality of individually identifiable superconductive films disposed one atop another (paragraph [0041]) and in direct contact with each other free of intervening layers (Figure 5 and Example 1).

Mannhart et al. do not specifically teach the claimed multiples of layers, the substrate as being stainless steel or Inconel, a superconducting layer comprising Sm123, or the current capacity as claimed. Further, the thicknesses as claimed are not specifically taught, although they are implicitly taught as described above.

Regarding claims 1, 36 and 43, the superconductor films may be applied as multilayers free of intervening layers (paragraph [0041] and Figure 5). Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the multiple layers as taught in Figure 5, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 24 and 25, a substrate comprising a Ni-alloy tape is taught (Example 1).

Regarding claims 26 and 27, substrates made of nickel based alloys or similar materials are taught (paragraph [0010]). Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use steel or Inconel as the substrate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 28-30, a buffer, such as YSZ, is applied prior to application of the superconductive layers to the substrate (Example 1). The buffer layer may have a bi-axial texture (paragraph [0010]).

Regarding claims 31-34,  $\text{ReBa}_2\text{Cu}_3\text{O}_7$  is a suitable rare earth oxide material for the superconductive layers, where Re is a rare earth or Y (paragraph [0041]).

Regarding claims 37-40 and 43, the superconductive layers are a few microns in thickness (paragraph [0010]), usually about 0.5 to 1.5 microns (paragraph [0024]), and each layer may have a different thickness from the other layers (Figure 5). Thus, when multiple layers are combined, the thickness of the resulting superconductive layer falls within the ranges claimed. Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 41, as Mannhart et al. use like materials in a like manner as claimed, it would be expected that the superconducting article will have the same characteristics claimed, particularly the current capacity, absence a showing of unexpected results.

Regarding claim 42, the current density exceeds  $10^6 \text{ A/cm}^2$  (paragraph [0011]).

Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

***Response to Arguments***

Applicant's arguments filed 7/12/07 with respect to the Mannhart reference, including the Rule 132 Affidavit submitted by the inventor, have been fully considered but they are not persuasive.

In particular, applicant argues Mannhart does not teach multiple superconductive layers atomically bonded absent an intervening bonding layer. However, the superconductor films may be applied as multilayers free of intervening layers (paragraph [0041] and Figure 5). Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the multiple layers as taught in Figure 5, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

More particularly, applicant argues Mannhart teaches mechanical bonding of the multiple superconductive layers rather than atomic bonding as claimed. However, even mechanical bonding includes some level of atomic bonding or the layers would separate. More importantly, Mannhart teaches application of the layers using various techniques including MOCVD (paragraph [0041]), the same technique used by applicant. As like materials are used in a like manner, atomic bonding is expected in the product taught by Mannhart.

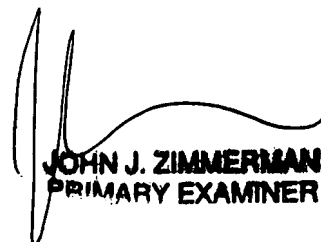
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASA



**JOHN J. ZIMMERMAN**  
**PRIMARY EXAMINER**